

ABSTRACT

The present invention relates to noval design of mechanical valve prostheses and manufacturing methods. A series of prosthetic valves with novel design and a unique manufacturing approach are disclosed. These devices possess unique designs and are made of nanostructurely engineered biomaterial. In addition, a novel manufacturing approach will be used to produce these devices because the convention technique is incapable of fabricating the devices due to the small size, design requirements and material properties restrain. Furthermore, it provides the convenience and thus low cost in manufacturing. The devices are particularly but not exclusively useful in human circulation system to restore the normal functions.